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CIRRIPEDIA

BY

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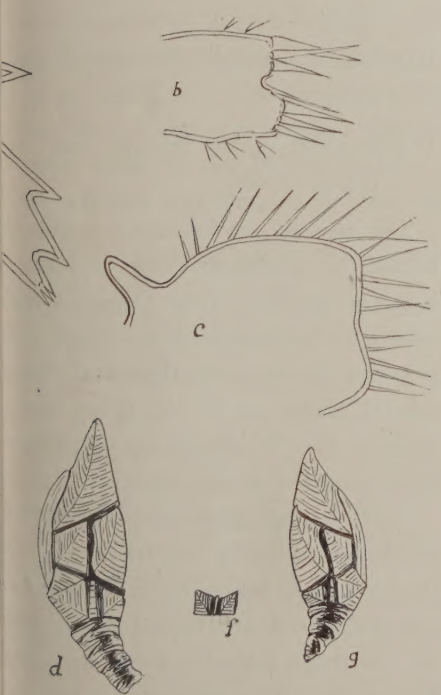
VISBY

e Swedish Deep-Sea Expedition 1947
vo small cirripeds were brought up from
h of 4,540—4,600 m. The cirripeds
to the genus *Scalpellum* and are here
ed as a new species. Since our knowledge
deep-sea species of cirripeds is rather
lete this little find will be of value. I
express my thanks to Prof. O. NYBELIN
kindness in letting me examine this
l.

Scalpellum pentagonum n. sp.

Fig. 1.



Scalpellum pentagonum n. sp. a. Mandible. b. I. c. Maxilla II. d. Holotype lateral view, e. rinal view. f. Rostral view. g. Paratype.

M a t e r i a l : St. 387 (Haul No. 13), N 40° 33′ W 35° 24′—N 40° 34′ W 35° 52′, Sept. 7th 1948; depth 4,540—4,600 m. 1 specimen, holotype, fixed on the stalk of the ascidian *Culeolus suhmi* HERDMAN. Paratype from the same locality is fixed on the bryozoan *Levinsenella magna* (BUSK).

Types: Nat. Hist. Museum, Gothenburg.

D i a g n o s i s : Female. Capitulum with fourteen valves without hairs, separated by small chitinous interspaces. Growth lines weakly marked. Scutum quadrangular, occludent margin convex. Tergum large, triangular. Carina regularly bent, umbo apical, dorsal roof concave with lateral ridges. Upper latus quadrangular, umbo apical. Rostrum narrow, umbo apical. Rostral latus quadrangular, as high as wide. Inframedian latus narrow, umbo apical. Carinal latus pentagonal, carinal margin divided in two parts of which the upper is a little hollowed out. Umbo between these parts. Ridges from the umbo to the opposite corners. Peduncle short with transversely elongated scales. Mandible with three teeth and an inner angle with few teeth. Maxilla I with a distinct notch. Maxilla II is broad with an indistinctly marked notch, maxillary lobe is formed. Caudal appendage single-jointed. Complemental male sacklike without valves and cirri.

Description

F e m a l e . *Capitulum* covered by a thin cuticle without hairs. Valves fourteen in number, separated by narrow chitinous interspaces. The growth-lines in this species weakly marked.

Scutum quadrangular with a somewhat convex occludent margin. Tergal margin straight. The lateral margin is a little hollowed out above.

Tergum fairly large, triangular, with a straight occludent margin. Apex not much recurved.

Carina regularly bent with the umbo apical. Dorsal roof somewhat concave with distinctly indicated lateral ridges. The sides are well developed.

Upper latus quadrangular with straight margins. Umbo situated at the apex. The scutal margin is the longest.

Rostrum narrow with the umbo at the apex.

Rostral latus quadrangular as high as wide, with a ridge from the umbo to the opposite corner.

Inframedian latus narrow with the umbo apical.

Carinal latus pentagonal, with a shape typical of the species. The carinal margin is divided in two parts. The upper part a little hollowed out. The umbo is situated between these parts. Ridges from the umbo to the opposite corners.

Peduncle shorter than the capitulum with transversely elongated scales distinctly separated by chitinous interspaces. The cuticle is not hairy.

Measurements in mm.

	Length of capitulum	Breadth of capitulum	Length of Peduncle	Breadth of Peduncle
Holotype ...	3.3	1.5	0.9	0.5
Paratype ...	2.5	1.2	0.8	0.4

Mouth-parts: Palpus conical with few bristles at the top. Mandible with three teeth and an inner angle with a few finer teeth. Maxilla I with a distinct notch in the middle of the front edge. Above and below this notch there are some stronger spines. Maxilla II broad with an indistinctly marked the middle of the front edge. Bris the front edge and the upper margin illary lobe is formed.

Cirrus I short with unequal sisting of six and seven segments re in the holotype. The segments in t cirri have three pairs of spines in the f

Caudal appendage short a jointed.

Complemental male is of like type without traces of valves. T is minutely spinose.

Discussion: These small seem to be mature, because a com male could be traced. According to t (Nilsson-Cantell 1931) there are f of male in the genus *Scalpellum* (sens

I) Sacklike males with four ruc valves (scuta and terga) and s ments of cirri.

II) Sacklike males with four valve cirri.

III) Sacklike males with reduced ci valves.

IV) Sacklike males without any valves or cirri.

This new species belongs to group named *Sc. pentagonum* and is relat *bouvieri* Gruvel, 1906, complemen cribed by Nilsson-Cantell (1926). cies was taken in the Ross Sea. Th mental males are of the same type species. The two species are well diff by several characters, especially ext

Another *Scalpellum*-species, which degree seems to be related, is *Sc.* Gruvel, 1900, taken by the »Talisma tion near the Azores from a depth of m. To judge from the incomplete d by Gruvel, *Sc. pentagonum* is also rated from *Sc. atlanticum*. Many spe the deep-sea, especially of the genus *S*

ry incompletely described in the first
ied papers and many of them not later
d. For most of them there are no descrip-
f the internal parts such as mouth-parts,
appendages and complemental males,
are of great value for the identification
finds. I have here tried to give a
te description also as regards internal
which was not easy because the speci-
were very small.

* * *

draw any conclusions from the lists here
as regards the deep-sea cirriped fauna is
e present not possible. Our knowledge
rather insufficient. Information about
ature is often lacking. Certainly the
netrical distribution of many deep-sea
is dependent on this. The following
are represented from depths beyond
n, viz. *Smilium*, *Scalpellum*, *Megalasma*
rruca. The genus *Smilium* is represented
ecies from the Indian and Pacific Ocean.
eatest number of species belong to the
Scalpellum and *Verruca*. According to
s 16 species of the genus *Scalpellum* are
nted in the Atlantic Ocean. One of
is also found in the Indian Ocean. 4
are hitherto registered only from the Pacific Ocean, 1 from the Indian and Pacific Oceans and 2 only from the Indian Ocean. If species from depths between 2,000 and 3,000 m had been included in these lists the total number of *Scalpellum* species would have been greater. So for instance *Scalpellum velutinum* is noted from 40—2,900 m. *Scalpellum pentagonum* n. sp. is from a depth of 4,540—4,600 m. The greatest depth noted in the lists is 5,186 m for *Scalpellum regium*. The genus *Megalasma* is only represented by 2 species, both from the three oceans, and thus seems to have a more cosmopolitan distribution. *Verruca* is represented in the lists by 8 species: 7 from the Atlantic Ocean only and 1 from the three oceans. 7 species have only been taken from great depths, whereas 1 (*Verruca gibbosa*) has a wider bathymetrical distribution: 385—3,127 m.

Thus of the deep-sea species only 3 seem from the known finds to be cosmopolitan. Only 3 species have been taken from two oceans and 28 from one ocean. Our knowledge of the cirriped deep-sea fauna is deficient. No author has hitherto tried to give a complete discussion of the distribution of the deep-sea cirripeds. A treatise of this kind is given by STUBBINGS (1936) for the genus *Scalpellum* from the Indian Ocean. Further finds are necessary.

LIST I. NUMBER OF SPECIES BEYOND 3,000 M, AND OCEANS IN WHICH FOUND

Genus	Number of species	Atlantic Ocean	Indian Ocean	Pacific Ocean
um	1		+	+
	4			+
	1	+	+	
llum	15	+		
	1		+	+
	2		+	
asma	2	+	+	+
a	1	+	+	+
	7	+		

LIST II. CIRRIPEDS RECORDED FROM DEPTHS BEYOND 3,000 M FROM THE LITERATURE AT MY D

(The synonyms are given in brackets).

Species	Atlantic Ocean	Indian Ocean	Pacific Ocean	Depths in m	Auth
Smilium squamuliferum Weltner, 1894	—	Bay of Bengal	Malay Archipelago	101—3,475	Gruvel, 1 Nilsson-C 1938
Scalpellum abyssicola Hoek, 1883	—	Gulf of Aden	36° N. 178° E.	2,000—3,800	Hoek, 188 Nilsson-C 1938
Scalpellum albatrossianum Pilsbry, 1907	65° to 37° N. 71° to 28° W.	Bay of Bengal	—	638—3,775	Annandal Pilsbry 1
[*Scalpellum tenue* Annandale, 1905]					Stubbings Nilsson-C 1938 Broch, 19
Scalpellum alboranense Gruvel, 1914	38° to 36° N. 46° to 21° W.	—	—	4,400—5,005	Gruvel, 1
Scalpellum anceps C. W. Aurivillius, 1898	36° N. 22° W.	—	—	4,261	Gruvel, 1
Scalpellum antarcticum Hoek, 1883	—	65° S. 79° E.	—	3,063	Hoek, 188
Scalpellum brevecarinatum Hoek, 1883	—	46° S. 45° E.	—	2,514—2,926	Hoek, 188
Scalpellum compressum Hoek, 1883	2° N. 124° E.	—	—	3,931	Hoek, 188
Scalpellum Darwinii Hoek, 1883	33° S. 74° W.	—	—	3,950	Hoek, 188
Scalpellum debile C. W. Aurivillius, 1898	38° to 36° N. 70° to 22° W.	—	—	2,321—4,261	Pilsbry, 1 Gruvel, 1
[*Scalpellum dicheloplax* Pilsbry, 1907]					
Scalpellum Edwardsii Gruvel, 1900	Azores	—	—	4,255	Gruvel, 1
Scalpellum luteum Gruvel, 1900	Southwest of Azores	—	—	3,175	Gruvel, 1
Scalpellum mamillatum[1]) C. W. Aurivillius, 1898	37 to 38 N. 23 to 24 W.	—	—	4,020—4,261	Gruvel, 1 Broch, 19
Scalpellum marginatum Hoek, 1883	—	—	34° N. 134° E.	3,429	Hoek, 188
Scalpellum molle C. W. Aurivillius, 1898	38° N. 23° W.	—	—	4,020	Gruvel, 1
Scalpellum ovatum Hoek, 1883	—	—	2° N. 134° E.	3,657	Hoek, 188
Scalpellum pentagonum n. sp.	40° N. 35° W.	—	—	4,540—4,600	The preser
Scalpellum planum Hoek, 1883	—	—	42° S. 138° E.	4,755	Hoek, 188
Scalpellum recurvitergum Gruvel, 1900	Southwest of Azores	—	—	3,175	Gruvel,

[1]) According to Gruvel (1920) *Scalpellum semisculptum* Pilsbry, 1908 is identical with *Scalpellum mamilla* still seems doubtful (Broch, 1953).

Species	Atlantic Ocean	Indian Ocean	Pacific Ocean	Depths in m	Authors
m regium THOMSON, 1873 arieties	43° to 34° N. 71° to 10° W.	—	—	1,803—5,186	HOEK, 1883 PILSBRY, 1907 GRUVEL, 1920
m sinuatum EY, 1907	38° N. 69° W.	—	—	3,165	PILSBRY, 1907
m striatum EL, 1900 *um rigidum* AURIVILLIUS, 1898]	36° to 29° N. 22° to 8° W.	—	—	3,825—4,400	GRUVEL, 1920
m talismani EL, 1900 *um formosum* EY, 1907 *m bellum* n. nom. EY, 1908 *calpellum formosum* 1907]	Golfe de Gascogne; 37° to 58° N. 70° to 40° W.	—	—	3,192—4,255	GRUVEL, 1905 PILSBRY, 1907, 1908 BROCH, 1953
m vitreum 1883	—	—	34° N. 140° E.	3,449	HOEK, 1883
na (*Glyptelasma*) *um* CALMAN, 1919	Off coast of Cuba, 14° to 7° N. 23° to 21° W.	7° N. to 13° S. 16° to 14° E.	6° to 37° S. 121° to 165° E.	366—3,660	CALMAN, 1919 NILSSON-CANTELL, 1927, 1928
na (*Megalasma*) ANNANDALE, 1906 *sma bellum* RY, 1907, *ma lineatum* , 1907 a *sma carinodentatum* NER, 1894.]	—	Bay of Bengal, Arabian sea, East African coast, Maldives	Malay Archipelago, Hawaiian Islands	67—3,200	HOEK, 1907 a BROCH, 1931 NILSSON-CANTELL, 1928, 1938
bicornuta RY, 1916	41° N. 65° W.	—	—	3,127	PILSBRY, 1916
Darwini RY, 1907	40° to 39° N. 68° to 66° W.	—	—	2,844—3,185	PILSBRY, 1916
erecta EL, 1900	Azores	—	—	3,175	GRUVEL, 1905
gibbosa , 1883 *sulcata* 1883 *bicornuta* RY, 1916 *mitra* , 1907 b]	41° to 48° S. 65° to 21° W.	East African coast, near Crozet Islands	5° to 70° S. 132° E to 80° W.	385—3,128	HOEK, 1883, 1907 b NILSSON-CANTELL, 1928, 1929, 1938. PILSBRY, 1916 BROCH, 1931.
Joubini EL, 1912	47° N. 41° W.	—	—	4,630	GRUVEL, 1920
longicarinata EL, 1900	Sargasso sea	—	—	3,432	GRUVEL, 1905
quadrangularis , 1883	32° to 35° S. 50° to 17° W.	—	—	2,380—3,475	HOEK, 1883
Rathbuniana RY, 1916	40° N. 66° W.	—	—	1,812—3,237	PILSBRY, 1916 NILSSON-CANTELL, 1927

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